# Least Common Multiple

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# CONCEPT **1**  Least Common Multiple

Here you'll learn to find least common multiples of numbers by using lists.

Remember Mr. Caron and the art room? Well, while knowing the days that the students would meet in the art room was helpful, Mr. Caron now wants to figure out what the first day that this will happen will be. Let's review a bit about what we learned in the last Concept.

Cluster 6A gets to work in the art room every two days. Cluster 6B gets to work in the art room every three days.

If Mr. Caron could figure out when the groups are both in the art room on the same day, then he would have more art supplies ready. Or on those days, he could plan for the students to work on a bigger project. **If 6A works in the art room every two days and 6B works in the art room every three days, when is the first day that all of the students will be working in the art room together?**

We know that the students will meet on **2 4 6 8 10 12 14 16 18 20 22 24 26 28 30**

**3 6 9 12 15 18 21 24 27 30**

**The common multiples are 6, 12, 18, 24, 30. But how can we figure out their first day? This is where least common multiples become important!**

### Guidance

We can also find the *least common multiple* of a pair of numbers.

**What is the least common multiple? The least common multiple (LCM) is just what it sounds like, the smallest multiple that two numbers have in common.**

Let's look back at the common multiples for 3 and 4.

3, 6, 9, **12**, 15, 18, 21, **24**, 27, 30, 33, **36**

4, 8, **12**, 16, 20, **24**, 28, 32, **36**, 40, 44, 48

Here we know that the common multiples are 12, 24 and 36.

**The LCM of these two numbers is 12. It is the smallest number that they both have in common.**

**We used lists of multiples for 3 and 4 to find the common multiples and then the least common multiple.**

> Using lists is one way to find the least common multiple of two or more numbers.

Find the Least Common Multiple for each pair of numbers.

**Example A**

**5 and 3**

**Solution: 15**

**Example B**

**2 and 6**

**Solution: 6**

**Example C**

**4 and 6**

**Solution: 12**

Now let's go back to Mr. Caron. He already has the lists of common days that all the students will be in the art room. Now we can use those lists to figure out the first day that this will happen. Take a look.

**Since 6A meets every two days, two will be the first quantity. Since 6B meets every three days, three will be the second quantity. Now let's list the multiples of two and three. The common multiples will show the days that the students will both meet in the art room. The least common multiple will show the first day that the students will both meet in the art room.**

**2 4 6 8 10 12 14 16 18 20 22 24 26 28 30**

**3 6 9 12 15 18 21 24 27 30**

**The common multiples are 6, 12, 18, 24, 30. The least common multiple is 6. The students will both be in the art room on these days.**

**If the students start the decoration committee on a Monday, what is the first day of the week that the students will both be in the art room? We can make a list of days to figure this out.**

**Day 1 Monday**

**Day 2 Tuesday**

**Day 3 Wednesday**

**Day 4 Thursday**

**Day 5 Friday**

**Day 6 Monday – this the first day that both groups will be in the art room at the same time**

**Sometimes when you have a scheduling conflict like the one Mr. Caron had, using least common multiples is a great way to solve it!!**

## Vocabulary

Here are the vocabulary words in this Concept.

**Multiple**   the product of a quantity and a whole number

**Common Multiple**   a number or numbers that two or more multiples have in common.

**Least Common Multiple**   a number that is the smallest multiple that two or more values have in common.

## Guided Practice

Here is one for you to try on your own.

Find the LCM of 20 and 15.

**Answer**

To do this, first let's list out the multiples of both numbers.

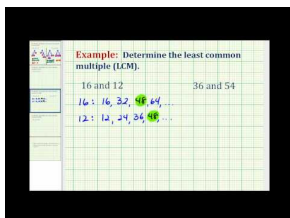20 = 20, 40, 60, 80, 100

15 = 30, 45, 60

**The LCM Of 20 and 15 is 60.**

## Interactive Practice



MEDIA
Click image to the left for more content.

## Video Review

Here are videos for review.



MEDIA
Click image to the left for more content.

James Sousa Example of Determining LeastCommon MultipleUsing aList ofMultiples

1. http://www.mathplayground.com/howto_gcflcm.html – This video covers finding the greatest common factor and the least common multiple of two numbers.

## Practice

Directions: Find the least common multiple of each pair of numbers.

1. 3 and 5

2. 2 and 3

3. 3 and 4

4. 2 and 6

5. 3 and 9

6. 5 and 7

7. 4 and 12

8. 5 and 6

9. 10 and 12

10. 5 and 8